

Unpacked South Dakota State Mathematics Standards

Purpose: In order for students to have the best chance of success, standards, assessment, curriculum resources, and instruction must be aligned in focus, coherence, and rigor. Unpacked standards documents are intended to help align instruction to the focus, coherence, and rigor of the South Dakota State Mathematics Standards. The standards have been organized in clusters as they are not so much built from topics, but rather woven out of progressions. Not all content in a given grade is emphasized equally in the mathematics standards. Some clusters require greater emphasis than others based on the depth of the ideas, the time that they take to master, and/or their importance to future mathematics or the demands of college and career readiness. To say that some things have greater emphasis is not to say that anything in the standards can safely be neglected in instruction. Neglecting standards will leave gaps in student skill and understanding and may leave students unprepared for the challenges of a later grade.

Domain: Numbers and Operations in Base Ten	Grade Level: 2
---	-----------------------

2.NBT.B Cluster: Use place value understanding and properties of operations to add and subtract.

In 2nd grade, learners use place value understanding and properties of operations to add and subtract. They also use strategies based on number sense, mental mathematics, and the relationship between addition and subtraction to solve problem situations with sums to 100.

****This is a MAJOR cluster.** Students should spend the large majority of their time (65-85%) on the major work of the grade. Supporting work and, where appropriate, additional work should be connected to and engage students in the major work of the grade.

2.NBT.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

2.NBT.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.

2.NBT.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting, three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, and ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

2.NBT.8 Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.

2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanations may be supported with words, drawings, or objects.)

Aspects of Rigor for Student Learning: (Conceptual, Procedural, and/or Application)

Conceptual Understanding	Procedural Fluency	Application
	Add and subtract within 100 based on place value, properties of operations, and/or relationship between addition and subtraction (2.NBT.5)	
	Add four two digit numbers using place value or properties of operations (2.NBT.6)	
Understand how composing and decomposing is an efficient way to add and subtract 3-digit numbers (2.NBT.7)	Add and subtract within 1000 using place value, properties of operations, and the relationship between addition and subtraction (2.NBT.7)	
Understand that only the tens place		

<p>changes when mentally finding 10 more or 10 less (2.NBT.8)</p> <p>Understand that only the hundreds place changes when mentally finding 100 more or less (2.NBT.8)</p>		
<p>Understand and explain when to use the Commutative and Associative Property (2.NBT.9)</p>		
<p>Enacting the Mathematical Practices - Evidence of Students Engaging in the Practices</p>		
<ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. <ul style="list-style-type: none"> • Apply appropriate strategies and connect physical models to abstract symbols. 5. Use appropriate tools strategically. 6. Attend to precision. <ul style="list-style-type: none"> • Attend to precision as they describe their reasoning and compare to alternate approaches of classmates. 7. Look for and make use of structure. <ul style="list-style-type: none"> • Use the structure of the base ten place value system. 8. Look for and express regularity in repeated reasoning. 		
<p>Vertical and Horizontal Coherence and Learning Progressions</p>		
<p><u>Previous Learning Connections</u></p>	<p><u>Current Learning Connections</u></p>	<p><u>Future Learning Connections</u></p>
<p>Learners add with one and two digit numbers and multiples of 10 within 100 using models and strategies. Learners are encouraged to use the concepts of place value, properties of operations, and the relationship between addition and subtraction. (1.NBT.4) (1.NBT.5)</p> <p>Learners subtract by units of 10 using properties of operations, place value, and addition/subtraction relationship. (1.NBT.6)</p> <p>Learners apply properties of operations as strategies to add and subtract. (1.OA.3)</p> <p>Learners understand subtraction as an unknown-addend problem. (1.OA.4)</p>	<p>Learners represent and solve addition and subtraction, 2-step word problems within 100. (2.OA.1)</p> <p>Learners fluently add and subtract within 20 using mental strategies. (2.OA.2)</p> <p>Learners understand that the three digits of a three-digit number represent specific amounts (2.NBT.1).</p> <p>Learns fluently and subtract within 100 using strategies, place value, and relationship between addition and subtraction (2.NBT.5).</p> <p>Learners use addition and subtraction within 100 to solve word problems involving lengths (2MD.5)</p>	<p>Learners solve two-step word problems. (3.OA.8)</p> <p>Learners fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. (3.NBT.2)</p>
<p>Vocabulary (Key Terms Used by Teachers and Students in this Cluster):</p>		
<ul style="list-style-type: none"> • Additive Identity Property of 0 • Associative Property of Addition • Commutative Property of Addition 	<ul style="list-style-type: none"> • Operation • Compose • Decompose • Digit 	<ul style="list-style-type: none"> • Place Value • Ones • Tens • Hundreds

Relevance, Explanations, and Examples:

3 digit + 3 digit
286 + 143

(regroup tens to hundreds)

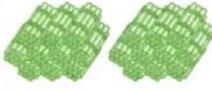
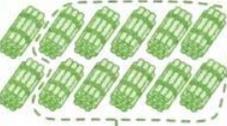
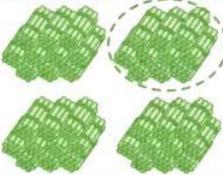
hundreds	tens	ones	
			286
			143
			3 hundreds 12 tens 9 ones
			4 hundreds 2 tens 9 ones
			429

Image Source: *Your Mathematics Standards Companion K-2*